

FOR IMMEDIATE RELEASE

CONTACT: Cheva Heck, (305) 292-0311

Seagrass Restoration efforts at Lignumvitae Key State Botanical Site

By David Boyd, Florida Department of Environmental Protection

It is an unfortunate fact of life that boat use in shallow Florida Keys waters often results in some level of damage to the area's natural resources. 1995 estimates indicated there were over 15,000 acres of moderately to severely scarred seagrass beds in Monroe County alone. Some areas have been so severely scarred that entire seagrass beds have disintegrated. In the Lignumvitae Key State Botanical Site (LKSBS) complex, poor navigational practices have caused severe scarring of seagrass beds.

In an effort to mitigate impacts of this activity, the park (LKSBS), in conjunction with the National Marine Fisheries Service, and others, has hosted a series of efforts to restore damaged seagrass beds. The most successful restoration method to date has involved planting plugs of Cuban shoal grass into the propeller scars. In conjunction with placing bird roost stakes along the scars, this has shown to produce significant regrowth of shoal grass. Shoal grass was initially planted, even though the grass beds are dominated by turtle grass, since shoal grass is a pioneer seagrass species. In high-current areas such as the grass flats around Lignumvitae, scarred areas can easily erode, instead of recovering, unless sediments are stabilized.

In a sequence known as compressed succession, scarred areas are first filled, if necessary, then planted with shoal grass, followed by placing bird stakes along the scar. Each treated scar is located with map-grade differential GPS equipment, allowing scientists to monitor recovery. Scars are monitored through counting grass shoots at randomly located sample sites within each scar and comparing them to counts in nearby healthy beds. Aerial photography has also been used for monitoring.

Nutrient input from seabirds roosting on the bird stakes has been shown to speed recovery of shoal grass. Once the scar has been stabilized by shoal grass, the stakes are removed to allow succession to turtle grass, since it appears shoal grass may out-compete turtle grass in a fertilized environment. Some estimates for recovery to complete coverage by shoal grass are as short as 1.5 years, but usually range from 3-7 years. There is little data on complete recovery to turtle grass in the Florida Keys. Succession to a mature turtle grass bed, which was the dominant component of this marine community, prior to the occurrence of scars, will take even longer, perhaps as long as 17 years. Since most of these experiments were not initiated until the mid to late 1990s, time required to attain full recovery is uncertain.

Since the initial seagrass restoration efforts, staff at LKSBS, in conjunction with the Florida Keys Environmental Restoration Trust Fund, have performed their own restoration efforts, using methodology supplied by earlier experiments. Areas with severe prop scarring, now designated as "No Combustion Zones", were chosen for the efforts. One site was located along Peterson Key Bank, another along Yellow Shark Channel.

The Peterson Key Bank location contained a large blowhole caused by the initial grounding. This scar had grown larger as strong currents ate away the calcium carbonate sands along the edges of the propscar and blowhole. This area was filled with substrate and bird stakes were placed in the fill to speed recovery.

Yellow Shark Channel is a high traffic zone with repeated prop scarring. The area has been closed to operation of combustion engines and planted with bird stakes to speed seagrass recovery through nutrient enrichment and help deter boats from running across the flat. These sites continue to be monitored by LKSBS staff.

Restoration efforts are funded through fines collected from vessel groundings and impact fees from dock construction. Although restoration projects are not a complete solution to propeller scarring, they are an integral part of managing these waters. Restoration, combined with boater education, limited access to sensitive areas, better channel marking, and other avenues, will help preserve the vital marine ecosystem of the Florida Keys.